

REMARKS

Favorable reconsideration of this application as presently amended is respectfully requested.

Claims 2 and 3 having been cancelled, the claims presently active in this application include claims 1, 4-22, of which claims 1, 4-14, 16 and 18-20 have been amended, and new claims 23-25.

Claim Objections

The Examiner objected to previously presented claims 1-22 as containing certain informalities. Applicants respectfully direct the Examiner's attention to the amendments above by which Applicants have corrected the informalities. In particular, the improperly hyphenated words and multiple dependency of claim 16 have been corrected. All reference characters have been enclosed within parenthesis.

35 U.S.C. ii 112 Rejection

The Examiner rejected previously presented claims 7, 8, 11, and 14 under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter of the invention. The Examiner's attention is directed to the amendments above, wherein the rejection is believed to have been overcome. In particular, the phrase "like 1-5 cm" has been deleted from claim 7, antecedent basis for "focus" has been added to claim 8, "may" has been deleted from claim 11 and "may be" has been deleted from claim 14.

35 U.S.C. 4 102 Resection

Previously presented claims 1-15 were rejected under 35 U.S.C. §102(b) as being anticipated by McKenna, U.S. Patent Application Publication No 2005/0100129

("McKenna"). The Examiner maintained that McKenna discloses each limitation of the pending claims. Previously presented claims 16-22 were not treated on the merits.

Claim 1 has been amended to incorporate the features of claims 2 and 3, now cancelled. As presently amended claim 1 provides that the first means (M) is for turning the arm structure, including both the first and second arm parts, as a whole, while the second means (M') is for turning the second arm part with respect to the first arm part. This construction provides important advantages and, as discussed below, is neither taught nor suggested by McKenna.

As pointed out throughout the specification, there are several reasons why it is advantageous to implement the invention so that a single means turns the entire arm structure as an entity while another means orients one of the arm parts with respect to another of the arm parts. Such a construction is in many ways simpler than turning the arm parts independently since, in practice, the deviation from parallel of the arm parts need not be large. Moreover, this construction enables existing mammography apparatus to only require relatively small modifications to incorporate the features of the invention since existing constructions already include means for turning an arm structure in its entirety. (Specification at p. 5, lines 13-34). As also described in the specification at page 8, line 25 et seq., such a construction is especially useful when it is desired that one of the arm parts be oriented at a certain angle with respect to the other while the latter arm part maintains its orientation with respect to the support structure of the apparatus. Driving the entire arm structure in one direction by a single means while driving one of the arm parts at a corresponding angular velocity but in the opposite direction achieves the desired result with greater ease and speed. Examples of possible modes of operation of an apparatus in which a single means (M) operates to turn the entire arm structure as a whole while another means (M') operates to turn one of the arm parts with respect to the other are described at page 9, line 1 to page 10, line 2. Such construction facilitates patient positioning and, moreover enables flexibility in the emplacement of the arm parts for

implementing these modes of operation. See also the specification at page 12, lines 24-31.

McKenna neither teaches nor even suggests a mammography apparatus in accordance with claim 1 as presently amended, i.e. one in which a single means (actuator) operates to turn the entire arm structure, including both first and second arm parts, as a whole in combination with another means (actuator) which operates to turn one arm part with respect to another arm part. Rather, McKenna only teaches turning each of the arm parts independently of the other using separate motors. It does not teach moving an entire C-arm using a single means (actuator). Specifically, in paragraph 029 of McKenna, it is only taught that the arm parts 22, 26 are always driven independently of each other by their respective motors 44, 46. In this connection, applicants respectfully disagree with the Examiner's position (with regard to original claim 2) that McKenna "teaches that a first actuator (40 and 44).... is arranged for turning the arm structure as a whole...." (Office Action at page 5, lines 11-13). The "first actuator (40 and 44)" only turns "arm part" 22 in McKenna (see, e.g. McKenna at Fig.4). While McKenna, in paragraph 029, refers to moving the arm parts "together", there is simply no disclosure or suggestion that this be done in any manner other than by rotating the two arm parts in the same direction at the same angular velocity independently using their own respective motors.

For the foregoing reasons, among others, claim 1 as presently amended is neither anticipated, nor rendered obvious, by the teachings of McKenna.

Claims 4-12 depend, either directly or indirectly, from claim 1 and, as such, include the same features as claim 1 and should be allowable for the same reasons discussed above with respect to claim 1. Moreover, McKenna is devoid of any teaching that the pivot axis of the second arm part is arranged at a distance "on the order of centimeters" from the upper surface of the lower shelf structure as recited in claim 7 so that claim 7 is allowable for this reason alone.

Independent claim 13 is directed to a method for turning an arm structure of a mammography imaging apparatus including at least two arm parts and means for changing the mutual orientation of first and second arm parts such that while the first arm part is rotated, the second arm part is rotated either in the same direction at a different angular velocity as the first arm part, or in a direction opposite to the direction of rotation of the first arm part. Contrary to the Examiner's position set forth at page 7, lines 1-11 of the Office Action, such a method in which the second arm part is rotated in the same direction as the first arm part, but at a different velocity, or in which the second arm part is rotated in the opposite direction from the first arm part, is neither disclosed nor suggested in McKenna.

The Examiner points to paragraph 020, 022 and 029 of McKenna in this regard. However, paragraph 020 is silent on the direction and angular velocity of the rotation of the respective arm parts. Paragraphs 022 and 029 only disclose that the arm parts 22, 26 of the C-arm 16 are arranged so that the compressor-Buckley assembly 24 and X-ray tube 20 can be rotated "together" or "independently". However, there is no suggestion that the two arms are moved in the same rotational direction but at different angular velocities, or in opposite directions. Rather, McKenna discloses either moving the arm parts "together", and the only way this can be implemented is by rotating the two arm parts in the same direction at the same angular velocity (by their respective motors), or moving the arm parts independently which implicitly suggests a movement only in which one of the arm parts is moved while the other remains stationary.

Since McKenna is devoid of several of the features recited in claim 13, it is submitted that the claim 13 is allowable. Since claims 14-22 all depend, either directly or indirectly, from claim 13, these claims should also now stand allowable for the same reasons as advanced above relative to claim 13.

Moreover, claim 14 specifies that the first arm part is rotated by the actuator which is capable of rotating the entire arm structure as a whole. As discussed above in

connection with claim 1, McKenna is manifestly devoid of a single means for rotating the arm structure as a whole.

As to claim 15, McKenna's motor is not integrated to the second arm part. There are several intermediaries (e.g. 40, 110, 22, 120) between them. Claims 16 and 17 define movement sequences of the first and second arm parts that are neither disclosed nor suggested by McKenna.

Claims 18-22 are directed to a "control arrangement" of a mammography apparatus which control routines for realizing actions according to the method of claim 13. Since McKenna does not teach the method of claim 13, these claims should be allowable for this reason alone. Nor does McKenna suggest a control arrangement in which the program routines include routines by means of which desired control sequences for the arm parts may be created into the control arrangements (claim 21) or which contains means for following and/or recognizing the mutual orientation of the arm parts, and/or their orientation with respect to the support structure of the apparatus (claim 22).

New claim 23 depends from claim 7 and specifies a preferred range of distances between the pivot axis of the second arm part and the upper surface of the lower shelf structure which is not suggested in McKenna.

New claims 24 and 25 depend from claim 1 and specify that the means (M,M') are arranged to enable turning the arm parts at different angular velocities in the same direction (claim 24) or such that while the first arm part turns in one direction, the second arm part turns in the opposite direction. As discussed above in connection with claim 13, McKenna does not disclose these features, so that in addition to the reasons advanced above relating to claim 1 (e.g. McKenna does not teach a single means for turning the arm structure as a whole), claims 24 and 25 should stand allowable for these other reasons.

In view of the foregoing, it is respectfully requested that this application is presently in condition for allowance and early passage to issue is respectfully requested.

Respectfully submitted,

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